



US Public Sector AI Opportunity Report

Highlighting AI Initiatives, Funding,
and Partnership Opportunities
Across the US Public Sector

| Authored by Ryan Smithright
Emerj Research Fellow

Edited by Daniel Faggella
Emerj Principal

Thrive in AI disruption

Emerj Artificial Intelligence Research

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- **Implications ("What's Working?")** – Determining the use-cases with a genuine track-record of ROI, and determining the integration costs and potential financial upside of AI applications.
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Contact Emerj

services@emerj.com
1-617-945-8567



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Section 0 - Introduction

0.A) About This Report

Document Overview

This report starts with a summary of the USA's published AI priorities and follows with a summary of motivations, budgets, key players, and opportunities for engagement.

The USA is advancing its formal plans to maintain a global leadership position in AI. On Feb 11, 2019, President Trump signed an executive order, founding the American AI Initiative, and the administration published a new funding commitment in September 2019.

This has grand implications for the global trajectory of AI adoption, AI R&D funding, AI legislation, AI security & safety standards, AI govt-industry partnerships, AI education resources, public tools & data for AI, and other public resources.

Document Mission

This guide has been written as a pragmatic, insight-dense report on the US AI Initiative, focused on actionable insights and opportunities for organization leaders.

Emerj analysts have read the relevant legislation, strategies, plans, press releases, memoranda, slides, articles, and tweets so you don't have to.

Opportunities for Readers of This Report

1. Learn about expanding demand and budgets for AI leadership across the US public sector.
2. Learn which agencies & organizations are leading AI innovation and how to engage them.
3. Learn about other key public sector AI technology trends and opportunities e.g. expanding access to govt data & supercomputing resources, forming AI legislation & standards, expanding public-private sector partnerships, workforce education programs, & more.



How to Use This Report

- 1. Identify where your organization's capabilities match with US public sector priorities & funding for AI.** (Sections I,II,III)
- 2. Review Emerj's detailed guide for Serving & Selling to the US Government.** (Section IV)
- 3. Review special opportunities emerging in key areas e.g. AI legislation, standards, shared data & tools.** (Sections V, VI, VII)
- 4. Review Emerj's compiled list of key public sector organizations, and match potential service opportunities for your organization.** (Sect. VIII)
- 5. Want help forming or enhancing your public sector service campaign?**
Need help identifying the key individuals to engage for your next steps? Apply to partner with Emerj for bespoke research, analytics, and technology assessment. (Page 3)
- 6. Reference the AI Initiative and this report in discussions with your Government stakeholders.** Align your proposals with their published missions to make a strong case for your proposals.





0.B) Intended Audience

Research | Strategy | Competitive Intelligence



Intended Audiences for this Report

Sections	 An Innovators Seeking Funding, Partnerships or Contracts	 AI Technology or Service Vendors who Sell to the Public Sector or US Government	 Government or Policy Leaders with an Interest in America's AI Strategy, Priorities, and Budget.	 Legal & Standards Compliance Leaders & Administrators
 USA's AI Leadership Goals	✓	✓	✓	✓
 New Funding for AI R&D	✓			
 USA AI Budget Report	✓	✓		
 Serving & Selling to the US Government		✓		
 The Evolution of US AI Legislation	✓	✓	✓	✓
 Understanding US AI Standards	✓			✓
 Shared Data & Tools	✓	✓	✓	
 Public Sector AI Partnership Opportunities	✓	✓	✓	

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www.emerj.com



Section I - USA's AI Leadership Goals

"Today our goal is very clear; the uniquely American ecosystem must do everything in its collective power to keep its lead in the AI race ..."

Michael Kratsios, USA CTO

I.A) Introduction

Through our analysis it is clear that the US government is pushing its agencies not simply to look into artificial intelligence, but to invest in and actually adopt the technology in order to maintain international prominence.

This is a strong forward stance on a technology that is in nascent stages of development - but it indicates that the US believes that AI adoption will be inevitable and critical to "drive growth of the United States economy, enhance our economic and national security, and improve our quality of life."

I.B) USA's Top AI Priorities

The following sections include a break-down of the USA's AI priorities, budgets, key players, and opportunities for partnership.

Emerj created this ranking based on a review of the USA's key AI planning & strategy documents (Appendix: Section XI.A).

Seven topics were bulleted among the highest priorities for % of the documents reviewed. The rank weighting values bulleted-mention "count" highest, then uses average order in mentions to break rank ties.

1. **New AI Research and Development** - Innovation in basic research, investing in new breakthroughs and new long-term capabilities.
2. **Coordinate International AI Efforts** - Lead international AI efforts around innovation, standards, ethics, etc. Work together with IGOs and other nations, and aid in coordinating their initiatives.
3. **Centralize and Enable US Government Infrastructure to Use AI** - Upgrade core technology infrastructure to develop AI readiness. Progress in general digital transformation.
4. **Increase Access to US Federal Data Sets** - Make more data more accessible, find more opportunities to leverage the value in existing data sets.
5. **Maintain US Leadership in AI** - Stay ahead of global competitors, especially China, in AI capabilities and innovation.



6. **Development of US Technology Standards for AI** - Determine standards that balance the need for innovation and regulation, that protect American values and still permit growth.
7. **Development of US Public-Private Sector Partnerships** - Find more ways to engage the private sector through investment, procurement.

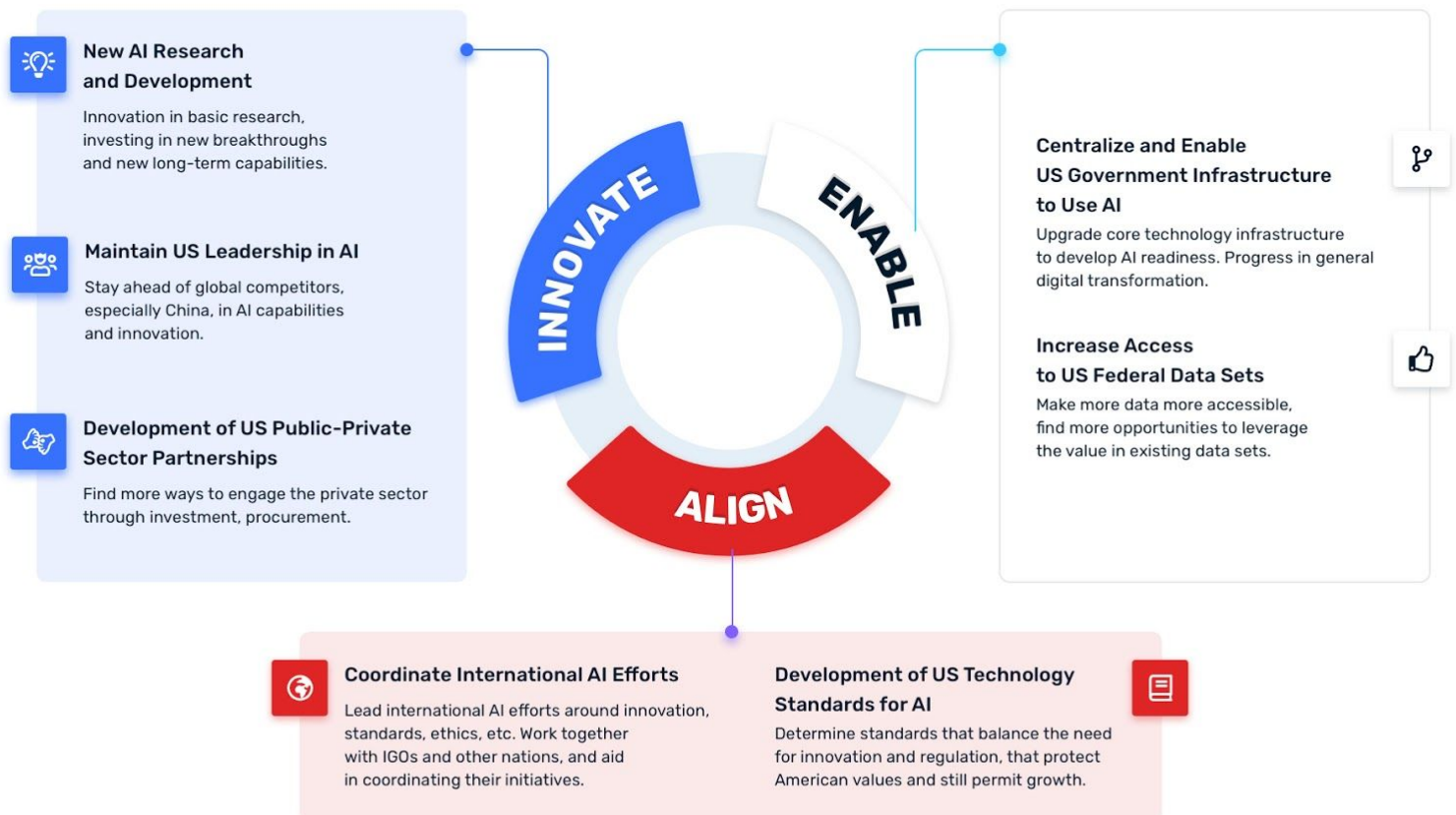
See image below:

Research | Strategy | Competitive Intelligence



US AI Priority Areas

The following is a list of common priorities from across six different US AI priority documents, including the Whitehouse AI Summit, the DOD AI Strategy, the Executive Order on Maintaining American Leadership in Artificial Intelligence, and more.



These rolled-up themes, culled from the stated AI priorities and initiatives throughout the US government's various documents and statements, will serve as common threads



throughout this report - and should serve as touchstones for AI vendors and service providers who want to align themselves with existing initiatives and budgets.

I.C) Executive Order on American Leadership in AI, the “AI Initiative”

Opportunities

1. Expanding demand and budgets across the US public sector for organizations conducting fundamental AI research or leading implementation of transformational AI technologies.
2. Interested parties have a route to serve or refer to the AI Select Committee - supported by a share of the AI Initiative’s resources - by first engaging with the AI inter-agency working group (IWG), the DoD’s Joint AI Center, or other central AI organizations (Section VIII).

Key Insights

1. AI leadership is a top priority for the US Presidential administration and technology advisors.
2. The USA’s Chief Technology Officer, the Director of DARPA, and the Director of the National Science Foundation (the USA’s highest-office technology leaders) have been ordered to advise the Executive Office of the President on matters of importance to the USA’s leadership in AI.
3. Each of the 3 AI Select Committee members has been granted high authority and formal mechanisms to fund and oversee interagency policy coordination and development.

Details about the Executive Order

The [February 2019 Executive Order on Maintaining American Leadership in Artificial Intelligence](#) broad authority to the co-chairs of the [National Science and Technology Council Select Committee, which includes 3 members](#):

1. [Michael Kratsios](#), Chief Technology Officer, USA
2. [Dr. Peter Highnam](#), Acting Director, Defense Advanced Research Projects Agency (DARPA)
3. [France Córdova](#), Director, National Science Foundation (NSF)

Notably, the Order empowers delegatory authority to the Committee:

“Actions shall be implemented by agencies ... as determined by the co-chairs of the NSTC Select Committee.” [Sec. 3](#)



This language suggests that each of the AI Select Committee members may have individual or joint authority to delegate with a wide mandate and nearly \$1 billion in new research funding to support AI innovations across all government agencies. *(additional budget info detailed in Section II of this document).*

And the Order mandates the Committee to oversee all agencies toward the following directives:

1. Develop and implement an action plan ... to protect the advantage of the United States in AI. [Sec. 2.\(f\)](#)
2. Heads of implementing agencies ... shall consider AI as an agency R&D priority. [Sec. 4.\(a\)](#)

I.D) AI Priorities Outline

The outline below summarizes Emerj's categorical perspective regarding the top AI focus areas for the US Govt. *(as of the time of this publication)*. It represents an expanded summary of the highest bulleted priorities from the USA's key AI planning & strategy documents *(see Appendix: Section XI.A)*.

The best way to use this section is to review it for potential alignment between the US AI Initiative's published priorities and the products, services, capabilities, or offerings of your organization. In areas where you see a match, you can be assured that the published plans and strategies include opportunities for engagement and potential service for your organization.

Maintain U.S. Leadership in AI.

- ☐ Economic Leadership
- ☐ National Security & Defense Leadership
- ☐ Skills Leadership
- ☐ Research Leadership
- ☐ Champion US AI Standards

AI Planning, Prioritization, & Resource Allocation

- ☐ Improve Federal resource allocation to support AI.
 - ☐ Motivate increasing AI research & development.
 - ☐ Motivate increasing AI adoption.
 - ☐ Motivate increases in shared federal assets for AI.
- ☐ Lead central coordination of many organizations and interests in AI.
 - ☐ Motivate central planning for AI.
 - ☐ Enable decentralized development.
 - ☐ Track and understand AI standards development strategies and initiatives of foreign governments and entities.



- ☐ Lead public-private sector partnerships.
- ☐ AI Center of Excellence
 - ☐ Development of a Center of Excellence
 - ☐ Management of a Center of Excellence
 - ☐ Exploring the benefits & services of a Center of Excellence

AI Research & Development: Targeted Capability Enhancements

- ☐ Robust & reliable algorithmic pattern recognition, perception, & visualization
- ☐ General AI (exhibiting the flexibility and versatility of human intelligence)
- ☐ Socially normative behavior patterns
- ☐ Resource allocation optimization algorithms e.g. combinatorial optimization
- ☐ Human capabilities augmentation
- ☐ AI-human interfaces
- ☐ AI risk management
 - ☐ Safety & trustworthiness
 - ☐ Security
 - ☐ Controllable motivations
 - ☐ Explainable motivations
 - ☐ Value-aligned motivations (ethical, legal, societal)
 - ☐ Reliability

Remove Internal Barriers to Innovation

- ☐ Centralize & enable internal US government infrastructure to use AI.
 - ☐ Model training infrastructure
 - ☐ AI testing infrastructure
 - ☐ Cloud computing infrastructure
- ☐ Increase internal access to federal data sets.
- ☐ Increase internal access to federal high-performance computational resources.
- ☐ Identify additional barriers to innovation e.g. privacy, security, info, data formatting.
- ☐ Modernize Government regulations.
- ☐ Build trust in AI.

Lead International AI Deliberations

- ☐ Promote and lead in safe and effective methods for human-AI collaboration
- ☐ Lead development of technology standards for:
 - ☐ Safety and trustworthiness
 - ☐ Security
 - ☐ Reliability
 - ☐ Accuracy
 - ☐ Useability
 - ☐ Interoperability
 - ☐ Explainable motivations
- ☐ Organize metrics and benchmarks based on standards
- ☐ Invest in public AI development assets



- ☐ Develop shared public datasets
- ☐ Develop shared public environments for AI training and testing

US Workforce Education

- ☐ Increase resources for STEM education
- ☐ Mobilize multiple education channels, such as universities, fellowships, apprenticeships, etc.
- ☐ Foster collaboration through an AI Center of Excellence model
- ☐ Hire AI-capable individuals
- ☐ Encourage and implement workforce training and retraining based on impending changes and AI-related skill sets
- ☐ New education support and legislation

Leverage AI to Improve Existing Government Services

- ☐ Ease process changes
- ☐ Improve public health

The following sections also present similar opportunities for identifying alignment between your organization and the US Government, including a summary of the USA's published AI research and development priorities, funding, and budgets.



Section II - US AI R&D

II.A) Eight Strategic Priorities for US AI R&D

This section provides the most detailed summary of the specific technologies, tools, and methods that have earned the highest focus for the [American AI Initiative](#).

In June 2019, the [USA National Science & Technology Council \(NSTC\) - Select Committee on AI](#) updated the [National AI Research & Development Strategic Plan](#), identifying eight strategic priorities. These priorities specifically address the USA's research and development goals for AI, whereas the outline in the previous section details all AI-related priorities.

Review the R&D priorities below, paying special attention for potential alignment with the products, services, capabilities, or offerings of your organization. In areas where you see a match, you can be assured that the USA's published plans and strategies include opportunities for engagement among the Government's highest published priorities.

Strategy 1: Make Long-Term Investments in AI Research

- ☐ Advancing data-focused methodologies for knowledge discovery
- ☐ Understanding theoretical capabilities and limitations of AI
- ☐ Pursuing research on general-purpose artificial intelligence
- ☐ Developing scalable AI systems
- ☐ Fostering research on human-like AI
- ☐ Developing more capable and reliable robots
- ☐ Advancing hardware for improved AI
- ☐ Creating AI for improved hardware while improved hardware can lead to

Strategy 2: Develop Effective Methods for Human-AI Collaboration

- ☐ Developing AI systems that complement and augment human capabilities, with increasing focus on the future of work
- ☐ Seeking new algorithms for human-aware AI
- ☐ Developing AI techniques for human augmentation
- ☐ Developing techniques for visualization and human-AI interfaces
- ☐ Developing more effective language processing systems

Strategy 3: Understand and Address the Ethical, Legal, and Societal Implications of AI.

- ☐ Addressing ethical, legal, and societal considerations in AI
- ☐ Improving fairness, transparency, and accountability by design
- ☐ Building ethical AI
- ☐ Designing architectures for ethical AI



Strategy 4: Ensure the Safety and Security of AI Systems

- ☐ Creating robust and trustworthy AI systems
- ☐ Improving explainability and transparency
- ☐ Building trust
- ☐ Enhancing verification and validation
- ☐ Securing against attacks
- ☐ Achieving long-term AI safety and value-alignment

Strategy 5: Develop Shared Public Datasets and Environments for AI Training and Testing

- ☐ Increasing access to datasets and associated challenges
- ☐ Developing and making accessible a wide variety of datasets to meet the needs of a diverse spectrum of AI interests and applications
- ☐ Making training and testing resources responsive to commercial and public interests
- ☐ Developing open-source software libraries and toolkits.

Strategy 6: Measure and Evaluate AI Technologies through Standards and Benchmarks

- ☐ Supporting development of AI technical standards and related tools
- ☐ Developing a broad spectrum of AI standards
- ☐ Establishing AI technology benchmarks
- ☐ Increasing the availability of AI testbeds
- ☐ Engaging the AI community in standards and benchmarks

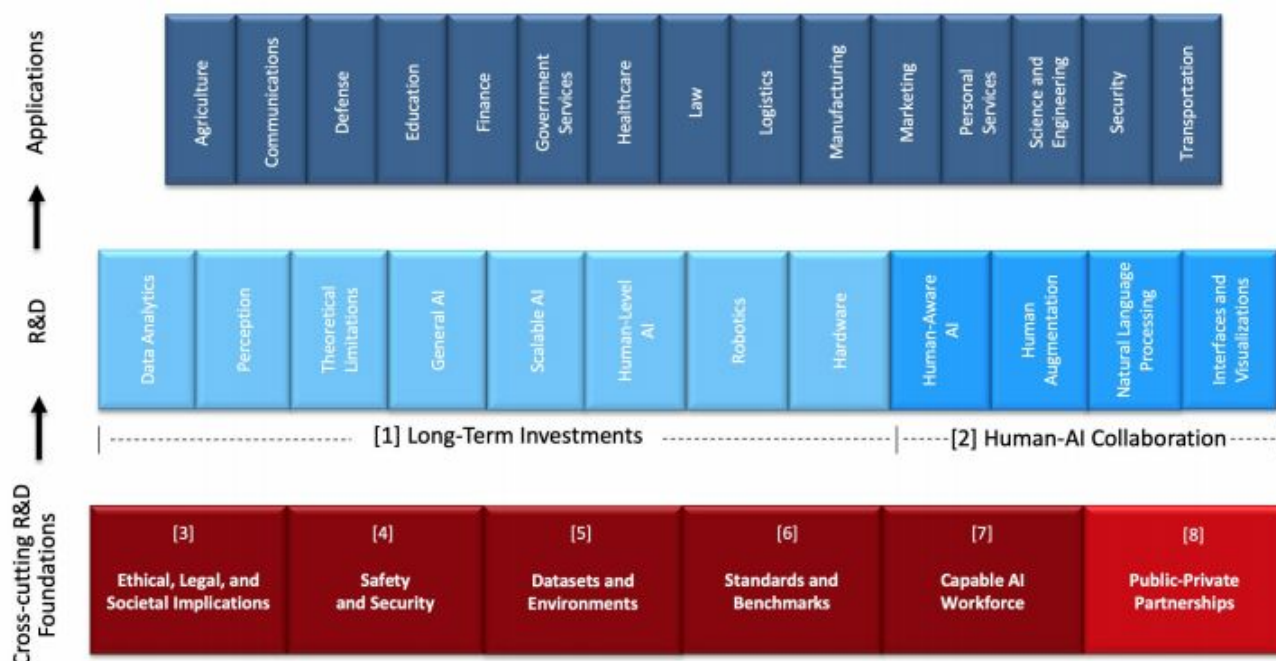
Strategy 7: Better Understand the National AI R&D Workforce Needs

- ☐ Advancing the AI R&D workforce, including those working on AI systems and those working alongside them, to sustain U.S. leadership

Strategy 8: Expand Public–Private Partnerships to Accelerate Advances in AI

The figure below, included from the [AI R&D Strategic Plan](#), shows the relationships between R&D focus areas and their relevant applications:





Across the bottom row of boxes are the crosscutting, underlying foundations that affect the development of all AI systems; these foundations are described in Strategies 3-7 and the new Strategy 8.

The next layer higher (middle row of boxes) includes many areas of research that are needed to advance AI. These R&D areas (including use-inspired basic research) are outlined in Strategies 1-2.12 Across the top row of boxes in the graphic are examples of applications that are expected to benefit from advances in AI.

Together, these components of the AI R&D Strategic Plan define a high-level framework for Federal investments that can lead to impactful advances in the field and positive societal benefits.

II.B) How and Where to Apply for AI Research Grants

This section is available in the expanded Emerj AI Opportunity Landscape for the US Government. To learn more about the complete research, [submit an inquiry online](#).

II.C) Opportunities to Make Use of Existing Govt-Funded AI Research

This section is available in the expanded Emerj AI Opportunity Landscape for the US Government. To learn more about the complete research, [submit an inquiry online](#).



Section IV - Serving the US Public Sector

IV.A) Expansion of Public-Private AI Partnerships

The [Executive Order for American Leadership in AI](#) explicitly mandates an expansion of public-private partnerships to support AI leadership and requests that NIST create a formal plan to expand partnerships. This is great news for any organization in a position to support US AI leadership.

Opportunities

- ❑ Read NIST’s plan excerpt (below) detailing support and expansion for public-private partnerships.
- ❑ Reach out to NIST to explore opportunities for partnership and support for the US AI Initiative.
- ❑ Consider referring to the Feb Executive Order and NIST’s plan directly when engaging organizations to explore opportunities. They may not be aware of recent developments, and your knowledge of the Initiative and its Plans will support your proposals.

Excerpt from [NIST’s August 2019 Plan](#)

Support and expand public-private partnerships to develop and use AI standards and related tools to advance reliable, robust, and trustworthy AI.

- ❑ *Strategically increase participation in the development of technical AI standards in targeted venues. Participation may include a variety of engagement options ranging from monitoring to leading— especially at the early stage of standards development where major decisions can be made about scoping and leadership. In making decisions about involvement in standards development, consider the priorities and guidelines cited in Section 2(A) and (B) and SDO activities cited in Appendix II.*
- ❑ *Advance non-traditional collaborative models for standards development, such as open-source efforts and Federal open data initiatives.*
- ❑ *Increase data discoverability and access to the Federal government data that is authorized for public use to enable more widespread training and use of AI technologies particularly as they relate to standards development.*



- ❑ *Spur benchmarking efforts to assess the reliability, robustness, and trustworthiness of AI systems. Ensure that these benchmarks are widely available, result in best practices, and improve AI evaluations and methods for verification and validation. Suggested lead: Department of Commerce.*
- ❑ *Foster collaborative environments to promote creative problem solving through AI challenge problems and testbeds to advance standards development.*
- ❑ *Facilitate research and collaboration across scientific disciplines to increase understanding of how societal and ethical considerations relate to, and can advance the development and use of standards for reliable, robust, and trustworthy AI technologies. Suggested lead: National Science Foundation, Department of Commerce.*

IV.B) Examples of AI Public-Private Partnerships

Examples are from: [The National Artificial Intelligence Research and Development Strategic Plan: 2019 Update](#), p42:

- ❑ *The Defense Innovation Unit (DIU)¹³² is a DoD organization that solicits commercial solutions capable of addressing DoD needs. The DIU in turn provides pilot contracts, which can include hardware, software, or other unique services. If successful, pilot contracts lead to follow-on contracts between companies and any DoD entity. A key DIU feature is the rapid pace of the pilot and subsequent contracts.*
- ❑ *NSF and the Partnership on AI, a diverse, multistakeholder organization working to better understand AI’s impacts, are partnering to jointly support high-risk, high-reward research at the intersection of the social and technical dimensions of AI.¹⁵*
- ❑ *The DHS Science and Technology Directorate’s Silicon Valley Innovation Program (SVIP)¹³³ looks to harness commercial R&D innovation ecosystems across the Nation and around the world for technologies with government applications. SVIP employs a streamlined application and pitch process; brings government, entrepreneurs, and industry together to find cutting-edge solutions; and co-invests in and accelerates transition to market.*
- ❑ *The Department of Health and Human Services (HHS) piloted the Health Tech Sprint initiative, also known in its first iteration as “Top Health,” modeled in part after the Census Bureau’s Opportunity Project. This effort created a nimble framework to public-private collaborations around bidirectional data links. It*



piloted new models for iterating on data release for AI training and testing, and it developed a voluntary incentivization framework for a public–private AI ecosystem.

- ❑ *The HHS Division of Research, Innovation, and Ventures is part of the Biomedical Advanced Research and Development Authority at the Office of the Assistant Secretary for Preparedness and Response. It oversees an accelerator network and is recruiting a nonprofit partner that can work with private investors to fund innovative technologies and products to solve systemic health security challenges, with AI applications being one area of interest. Accelerators will connect startups and other businesses with product development and business support services.*

IV.C) Opportunities to Help US Agency Leaders Form AI Centers of Excellence

This section is available in the expanded Emerj AI Opportunity Landscape for the US Government. To learn more about the complete research, [submit an inquiry online](#).

IV.D) AI Strategies of Major US Public Sector Branches - Maturity and Needs

This section is available in the expanded Emerj AI Opportunity Landscape for the US Government. To learn more about the complete research, [submit an inquiry online](#).

IV.E) How to Score Favorably on NIST’s Global AI Vendor and Tech Ranking

This section is available in the expanded Emerj AI Opportunity Landscape for the US Government. To learn more about the complete research, [submit an inquiry online](#).

IV.G) Steps to Become an Approved AI Vendor

This section is available in the expanded Emerj AI Opportunity Landscape for the US Government. To learn more about the complete research, [submit an inquiry online](#).





Section V - AI Legislation

V.A) Active US Bills

In recent years, Members of Congress have introduced a number of bills and resolutions to shape U.S. policy on artificial intelligence. As of the date of this publication, a few bills are already active.

Opportunities

- ❑ Read the bill summaries below. If any of these active bills might affect your organization, consider engaging your legal counsel to determine if and what actions may be necessary for your organization to take.
- ❑ Need help discovering which bills may be relevant for your organization? Need help determining the right organizations or individuals to engage about a bill? Emerj can help: emerj.com/partnerships, research@emerj.com

National Security Commission on Artificial Intelligence Act (H.R. 5356 / S. 2806)

Establishes the independent National Security Commission on Artificial Intelligence in the executive branch and directs it to conduct a review of advances in AI and the methods necessary to advance the development to address national security needs, including economic risk. This review shall consider U.S. competitiveness in AI, trends in international cooperation, means by which to foster investment in AI, workforce incentives to attract AI talent, risks of foreign advances in AI, ethical considerations, means to establish data standards and foster the sharing of training data, and privacy- and security- protecting measures for data used in AI. This bill was incorporated into the National Defense Authorization Act for Fiscal year 2019 (H.R. 5515) and signed into law.

American Innovation and Competitiveness Act (Public Law 114–329)

Enacted in 2017, updates instructions to the National Science Foundation and the National Institute of Standards and Technology (NIST) to conduct and support research on cybersecurity and cryptography. It creates a Director of Security at NIST. It revises the program requirements on the Networking and Information Technology Research and Development program which coordinates advanced computer research across U.S. government agencies. It assigns to the Office of Management and Budget a responsibility to create an interagency working group to reduce administrative burdens on federally-funded researchers. The act authorizes creation of an interagency advisory panel and working groups to consider education for science, technology, engineering, and mathematics (STEM) fields. The act supports the coordination of citizen science and crowdsourcing by Federal agencies to accomplish their missions.^[1]



V.B) Active International Agreements

Opportunities

- ❑ Read the agreement summaries or full referenced documents below. Consider reaching out to engage the project groups and expert panels from which these agreements formed.
- ❑ Consider responding (by March 6, 2020) to the USA's request for public comment on its [Guidance for Regulation of Artificial Intelligence Applications](#), which specifically addresses the OECD Principles.

[OECD Principles on Artificial Intelligence](#)

"In 2019, the OECD proposed principles to promote artificial intelligence (AI) that is innovative and trustworthy and that respects human rights and democratic values. On May 2019, the USA and other OECD member countries signed a commitment to adhere to the [OECD Principles on Artificial Intelligence](#).

Jan 7, 2020, the US [shared a draft](#) of the administration's [Guidance for Regulation of Artificial Intelligence Applications](#). The White House policy would, for example, come into effect when the Department of Transportation sets rules for AI-enabled drones, or the Food and Drug Administration approves AI-powered medical devices. However, Parker clarified that the government's use of AI remains "outside the purview" of this document."

[G20 AI Principles](#)

In June 2019, the [G20 Trade Ministers and Digital Economy Ministers met](#) to advance discussions and refine guiding principles for the safe and effective advance of AI. The [G20 AI Principles](#) support responsible stewardship of Trustworthy AI, and the document makes specific recommendations for national policies and international cooperation.

V.C) Proposed US Bills & Resolutions - Not Active

Opportunities

- ❑ Read the bill summaries below. If any of these proposed bills might support or enable your organization, consider reaching out to the bill's authors to join the discussion or advance support for the proposal.
- ❑ Conversely, if a proposed bill might hinder your capabilities, consider reaching out to inform the discussion.



The following AI legislation list & bill summaries are from the [Center For Data Innovation's AI legislation tracker](#). (Last updated Dec 2, 2019)

2020 Proposals

[Draft Guidance for Regulation of Artificial Intelligence Applications](#)

"This draft Memorandum sets out policy considerations that should guide, to the extent permitted by law, regulatory and non-regulatory oversight of AI applications developed and deployed outside of the Federal government. Although Federal agencies currently use AI in many ways to perform their missions, government use of AI is outside the scope of this Memorandum."

2019 Proposals

[Future Defense Artificial intelligence Technology Assessment Act \(DATA\) Act \(H. R. 2432\)](#)

"Directs the Secretary of Defense to submit a report to Congress on the Department of Defense's artificial intelligence strategy. This report is to include an analysis of how DoD is using AI, a description of the data the Secretary would need to properly conduct this analysis, a plan to protect AI systems from bad actors, an analysis of the expected benefits of AI for the armed forces over the next 20 years, an analysis of the potential for AI to improve multi-domain operations across the armed forces, ethical guidelines applicable to DoD's use of AI, and the Secretary's plan to promote collaboration between DoD, industry, academia, and national laboratories on issues related to AI r&d, testing, acquisition, and deployment."

[Armed Forces Digital Advantage Act \(S. 1471\)](#)

"Defines a policy of promoting and maintaining digital engineering, including the use of AI, as a core competency of the armed forces. Directs the Department of Defense Under Secretary of Defense for Personnel and Readiness to appoint a Chief Digital Engineering Recruitment and Management Officer to carry out this policy, including by improving the armed forces ability to recruit, develop, and retain experts in digital engineering, developing multiple digital engineering career tracks with related competencies including data science and machine learning, and developing metrics to report on the overall capability of the armed forces to leverage digital engineering to deliver operational capabilities."

[Artificial Intelligence Initiative \(AI-IA\) Act \(S. 1558\)](#)

"Established a National AI Coordination Office, an AI Interagency Committee, and an AI Advisory Committee or non-government experts to develop a National Strategic Plan for AI R&D. Provides \$40 million in annual funding and directs the National Institute of



Standards and Technology (NIST) to identify metrics that can be used to evaluate AI algorithms and training data sets. Requires the National Science Foundation (NSF) to develop educational goals for addressing issues related to AI, such as algorithmic accountability and ethical implications, including by providing \$500 million to establish five Multidisciplinary Centers for Artificial Intelligence Research and Education. Provides \$1.5 billion in funding and requires the Department of Energy to create an AI research program and establish five Artificial Intelligence Research Centers. The AI-IA Act is a companion bill to the GrAITR Act (H.R. 2202).”

AI in Government Act (H.R. 2575)

“Establishes an AI Center of Excellence within the General Services Administration to improve the federal government’s ability to adopt and deploy AI, including by providing advice about AI acquisition and use, studying the economic, policy, legal, and ethical challenges and implications of the government’s use of AI, and encouraging joint initiatives with state and local governments, industry, and other stakeholders. Requires the Office of Management and Budget to issue a memorandum to agencies detailing ways to reduce barriers to AI, best practices for mitigating unintended consequences of the use of AI, and a template for agency AI governance plans, which agencies are required to develop. Previously introduced in 2018 as the AI in Government Act (S. 3502).”

Algorithmic Accountability Act (S. 1108 / H.R. 2231)

“Requires large companies that possess or control large amounts of personal data to conduct impact assessments about existing and new automated decision systems that pose a high risk of making unfair, biased, or discriminatory decisions impacting consumers, as well as of impacting privacy or security. Directs companies to address the risks found in these impact assessments, and encourages, but does not require, companies to make their impact assessments public.”

Growing Artificial Intelligence Through Research (GrAITR) Act (H.R. 2202)

“Directs the President to establish a “National Artificial Intelligence Initiative” to coordinate federal AI R&D activities to accelerate the development of the technology. These activities include: developing an AI workforce pipeline by expanding the number of researchers, educators, and students focusing on AI; identifying and minimizing “inappropriate” bias in AI and underlying datasets; and supporting efforts to establish metrics to evaluate AI safety, security, and reliability.”

Artificial Intelligence Job Opportunities and Background Summary (AI JOBS) Act (H.R. 4829)

“Directs the Secretary of Labor to produce a report on the impact of AI on the workforce. This report is to outline the specific data necessary to accurately analyze the growth and impact of AI, identify industries projects to see the most growth in AI use, analyze the education needed to develop, operate, and work alongside AI over the next 20 years, analyze which demographics will have increased career opportunities due to AI,



and those that may be vulnerable to displacement due to AI, and provide recommendations to alleviate workforce displacement."

Supporting the Development of Guidelines for Ethical Development of Artificial Intelligence (H.Res 153)

"Resolves that the House of Representatives will support the development of guidelines for the ethical development of AI. These guidelines will be developed in consultation with diverse stakeholders and will support aims that include the transparency and explainability of AI systems, accountability and oversight for all automated decision-making, access and fairness regarding technological services and their benefits, and the safety and security of AI systems."

2018 Proposals

FUTURE of AI Act (H.R. 4625 / S. 2217)

"Directs the Department of Commerce to establish a federal advisory committee to advise the agency on issues related to AI, including U.S. competitiveness, workforce, education, data and research sharing, and international cooperation."

AI in Government Act (S. 3502)

"Establishes the Emerging Technology Policy Lab within the General Services Administration to improve the federal government's ability to adopt and deploy AI, including by providing advice, improve agency rulemaking regarding emerging technologies, and circulating information about workforce development opportunities related to emerging technologies. Directs the Office of Personnel Management to identify skills necessary for roles related to AI and establish, or modify and existing, occupational series to include positions that primarily deal with AI."

Artificial Intelligence Reporting (AIR) Act (H.R. 6090)

"Directs the National Science and Technology Council's Machine Learning and Artificial Intelligence subcommittee to submit a report to Congress detailing a strategic plan for AI R&D, the federal government's use of AI applications, and the federal government's efforts to enhance federal R&D activities by embracing workforce diversity."

Strengthening our Military Asset by Researching Technology to better Assure Security and Efficiency (SMART BASE) Act (H.R. 7011)

"Directs the Department of Defense to conduct a study of the use of smart technology, including automation and artificial intelligence, on military installations to improve military readiness and service delivery, enhance physical security and cyber security, and increase efficiency. Directs the Department of Defense to report the findings of this study, along with any recommendations, to Congress."



Section VI - AI Standards

VI.A) How AI Standards May Affect Your Organization

AI standards are forming now, and technology leaders have opportunities to join formative discussions that will impact norms and standards across the range of AI technologies for years to come.

Opportunities

- ❑ Read NIST’s [Plan for Federal Engagement in Developing Technical Standards and Related Tools](#).
- ❑ Engage NIST, IEEE, or other groups to join formative AI standards discussions & projects.

Here’s a bit of context regarding the importance of technology standards: In the internet’s formative years, American technology leaders in Government, Academia, and Industry collaborated to develop standards like the [http protocol](#), which have and will continue to impact the trajectory of internet use worldwide. This includes the internet infrastructure’s capabilities, limiting factors, and [dangerous weaknesses](#). Now, American leaders aim to be central in the formation of AI standards.

Notable Examples

- ❑ In response to the Executive Order, the US [National Institute of Standards & Technology \(NIST\)](#) published a [Plan for Federal Engagement in Developing Technical Standards and Related Tools](#).
- ❑ The US Dept. of Homeland Security published a study titled [AI: Using Standards to Mitigate Risks](#). In DHS words, the study: “Seeks to identify factors to consider when formulating standards to manage the national security risks of using artificial intelligence (AI) for decision support systems. The goal is to start a dialogue on creating standards that will reduce the risk from use, misuse, and exploitation of AI, without impeding the United States’ technological development and competitive advantage.”
- ❑ The Institute of Electrical and Electronics Engineers (IEEE) has also undertaken efforts to [ethically align the design of autonomous & intelligent technologies](#).

VI.B) How You can Contribute to the Evolution of AI Standards

This section is available in the expanded Emerj AI Opportunity Landscape for the US Government. To learn more about the complete research, [submit an inquiry online](#).



Section VII - Shared Data and Tools

VII.A) Public Sector Supercomputing & Data Resources

HEC	Federal High End Computing (HEC) Information Portal	Portal for U.S. Federal government high performance computing: supercomputer use, software access, research opportunities, and related events.
DoD HPC	High Performance Computing - Modernization Area \ Dept of Defense	The U.S. DoD's HPC Centers provide 7 billion processor hours of computing power per year, over 32 petaFLOPS of computing capability, high-speed networks, multi-petabyte archival mass storage systems, and computational expertise. Supported by counterpart data analysis and customer assistance services.

VII.B) Enabling Infrastructure for Increased Sharing of Government Data, Internally and Publicly

This section is available in the expanded Emerj AI Opportunity Landscape for the US Government. To learn more about the complete research, [submit an inquiry online](#).

VII.C) Shared Public Tools for Developing, Training, & Testing AI

This section is available in the expanded Emerj AI Opportunity Landscape for the US Government. To learn more about the complete research, [submit an inquiry online](#).



Section IX - Appendix

XI.A) Key Strategy & Planning Documents for the American AI Initiative

Pub. Date	Doc Title	Author
Feb 2020	American AI Initiative: Year 1 Annual Report	The White House Office of Science and Technology Policy
Nov 2019	2016-2019 Progress Report: Advancing AI R&D	AI R&D Interagency Working Group
Sep 2019	Summary of the 2019 White House Summit on Artificial Intelligence in Government	The White House Office of Science and Technology Policy
Sep 2019	The Networking & Information Technology Research & Development Program Supplement to the President's FY2020 Budget	Subcommittee on Networking & IT Research & Development Committee on Science & Technology Enterprise of the National Science & Technology Council
Aug 2019	U.S. Leadership in AI: A Plan for Federal Engagement in Developing Technical Standards and Related Tools	National Institute of Standards & Technology - U.S. Dept. of Commerce
Jun 2019	The National Artificial Intelligence Research and Development Strategic Plan - 2019 Update	Select Committee on Artificial Intelligence of the National Science & Technology Council
Feb 2019	Executive Order on Maintaining American Leadership in Artificial Intelligence	USA Presidential Administration



Jan 2019	The AIM INITIATIVE - Augmenting Intelligence using Machines Increasing insight and knowledge through Artificial Intelligence, Automation, and Augmentation	Office of the Director of National Intelligence (Overseeing the Intelligence Community)
2018	Summary of the 2018 Department of Defense AI Strategy	U.S. Dept. of Defense

XI.B) USA Budget Resources

Pub. Date	Doc Title	Author
Feb 2020	2021 Budget Fact Sheet	The White House Office of Science and Technology Policy
Sep 2019	Networking & Information Technology Research & Development (NITRD) Program Supplement to the President's FY2020 Budget	USA Subcommittee on Networking & Information Technology Research & Development Committee on Science & Technology Enterprise of the National Science and Technology Council
2019	Networking & Information Technology Research & Development (NITRD) Program Dashboard	(Same as above)
2019	2020 Budget - Analytical Perspectives R&D Chapter	USA Office of Management & Budget



2019	DoD Budget Documents & Materials	USA Office of the Under Secretary of Defense (Comptroller) / Chief Financial Officer
Aug 2019	Long-Term Implications of the 2020 Future Years Defense Program	Congressional Budget Office
Mar 2019	Finding Artificial Intelligence Money in the Fiscal 2020 Budget	Bloomberg Government

About Emerj Artificial Intelligence Research

Emerj Artificial Intelligence Research is where executive leaders turn to understand how AI is impacting their organization or industry – and what to do about it. We're the industry source for authoritative market research and competitive intelligence for the business applications of artificial intelligence.

Our objective, jargon-free research and industry overviews are designed to give executives and decision-makers exactly what they need for competitive insight, informed AI technology procurement and strategic planning around AI.

With a finger on the pulse of academia, Fortune 500s, and the global artificial intelligence startup ecosystem, organizations call upon us for insight and research for their most important AI-related strategic decisions.



Through our [Research Services](#), [AI Capability Maps](#) and [AI Business Strategy Process](#), we help clients win market share and make more profitable decisions – with a firm grounding in the current realities of the AI landscape.

Contact Emerj

services@emerj.com
1-617-945-8567



